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| APPLICATION NO.                                   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/695,992  | 10/26/2000  | Hiroshi Takahashi    | 198978US2           | 4046             |
| 22850   | 7590        | 10/06/2004           | EXAMINER            |                  |
| OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. |             |                      | ROGERS, SCOTT A     |                  |
| 1940 DUKE STREET                                  |             |                      | ART UNIT            |                  |
| ALEXANDRIA, VA 22314                              |             |                      | PAPER NUMBER        |                  |

2626

DATE MAILED: 10/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/695,992

Applicant(s)

TAKAHASHI ET AL.

Examiner

Scott A Rogers

Art Unit

2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-73 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-73 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 October 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Election/Restrictions***

This application contains claims directed to the following patentably distinct species of the claimed invention:

A) Claims 27, 33, 37, and 43 are directed to quantizing multi-tone image data by error diffusion characterized by generating the quantization threshold using a dither threshold matrix for forming halftone spots at an image space frequency in a range of 100 cycles per inch through 250 cycles per inch.

B) Claims 28, 34, 38, and 44 are directed to quantizing multi-tone image data by error diffusion characterized by generating the quantization threshold using a dot concentration dither threshold matrix having a screen angle of around 45°

C) Claims 29-31, 35, 39, and 45 are directed to quantizing multi-tone image data by error diffusion characterized by generates the quantization threshold using a dot concentration dither threshold matrix obtained from combining a plurality of basic dither threshold matrixes, wherein adjacent basic dither threshold matrixes are relatively shifted by a half phase in a direction perpendicular to the adjacent direction.

D) Claims 32, 36, 40, and 46 are directed to quantizing multi-tone image data by error diffusion characterized by generating the quantization threshold using a dot concentration dither threshold matrix for forming lines extending in a sub scanning direction.

E) Claims 41-42 and 47-48 are directed to quantizing multi-tone image data by error diffusion characterized by switching the dither threshold matrix used for generation of the quantization threshold according to a mode specified externally.

F) Claims 49-52, 54, 56-59, 61, 63, 65, 67-70, and 72 are directed to quantizing multi-tone image data by error diffusion characterized by oscillating a quantization threshold for the quantization processing so as to develop output dots spirally outward in a specific cycle in an image space as a shade level of the multi tone image data increases.

G) Claims 53, 55, 60, 62, 64, 66, 71, and 73 are directed to quantizing multi-tone image data by error diffusion characterized by oscillating a quantization threshold for the quantization processing so as to develop output dots concentrated in a central portion of a specific cycle in an image space for a low shade level region of the multi tone image data and develop output dots so as to disperse radially in a peripheral portion of the cycle for a middle or high shade level region of the multi tone image data.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 1-26 are generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Claim Language Observations***

Applicant is advised that dependent claims 63 and 64 have no antecedent basis for "said edge detection part" therein or in the claims from which they depend. It is noted that dependent claims 65 and 66, which dependent from the same claims, respectively, add the limitation of "an edge detection part". Correction of claims 63 and 64 should be made accordingly.

Also, note in the claims of Species Group G, the word "concentratedly" should be replaced with ---concentrated---.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott A Rogers whose telephone number is 703-305-4726. The examiner can normally be reached on Monday & Wednesday 6:00am-6:00pm and Tuesday & Thursday 6:00am-2:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly Williams can be reached on 305-4863.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to Customer Service at 703-306-0377. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

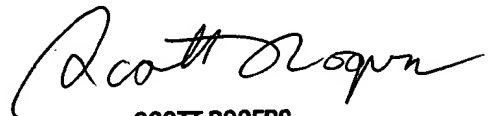
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Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



SCOTT ROGERS  
PRIMARY EXAMINER

September 30, 2004